

### REMARKS

The Examiner's attention to the present application is noted with appreciation. Applicant has carefully reviewed and considered the Final Office Action mailed on May 31, 2005, and the references cited therewith.

Claims 1, 5, and 13 are amended, claims 3, 4, and 16 are canceled, as a result, claims 1-2, 5-15, 17-24 are now pending in this application.

#### '102 Rejection of the Claims

Claims 1, 2, and 5 are rejected under 35 USC ' 102(b) as being anticipated by Desilets (U.S.2004/0040637). Desilets does not anticipate claims 1, 2, and 5 for the following reasons. Desilets discloses a mixture of carbon nanotubes with an energetic material such as carbon black powder to form an explosive. A physical two component mixture is a necessary and essential element of the Desilets invention as without the carbon black powder for example, there is no explosive capacity of the nanotube alone. In addition, Desilets expressly teaches away from a mixture containing greater than 20% nanotubes since the ignition phenomenon is "less efficient, i.e. the combustion process (explosion) appears to be incomplete." (page 1, paragraph 13).

Claims 1, 2 and 5 are directed to a chemically modified nanotube that is about 80% or greater weight percent of an explosive compound. Therefore, claims 1, 2, and 5 are not anticipated by the teachings of Desilets.

Claims 1-3, and 6 are rejected under 35 USC ' 102(b) as being anticipated by both Fisher et al (U.S.6,203,814) and Niu et al (2003/0089893). Neither Fisher nor Niu anticipate claims 1-3, and 6 for the following reasons. Fisher discloses a nanotube that is functionalized with a chemical substitution. The composition disclosed by Fisher is  $[C_nH_L]-R_m$ , where R is selected from a non-nitro containing group to functionalize a nanotube. (column 4, lines 32-35)

Niu discloses a composite having superior chemical, physical and electrical properties for forming a polymer. Nui teaches that the carbon nanotube content of the composite is from about 0.25 % to about 20 % by weight of the composite. Nui further teaches functionalizing the nanotube with a non-nitro containing group. (page 4, paragraph 0056).

Independent claim 1 is amended to include the feature of an explosive compound having 80 wt % or greater of nanotube content and that one or more nanotubes are functionalized with a nitro-containing group. Claim 2 and 6 depend from claim 1 and are patentable for at least the reasons as cited in claim 1. Therefore claims 1-3, and 6 are not anticipated by Nui nor Fisher.

*§103 Rejection of the Claims*

Claims 6-15 and 17-24 were rejected under 35 USC § 103(a) as being unpatentable over Stephens (U.S. 5,341,639 or 5,611,824) in view of Desilets (U.S. 2004/0040637). Neither Stephens or Desilets alone or in combination teach all the elements of claims 6-15 and 17-24. In addition, Desilets teaches away from a nanotube mixture containing greater than 20% nanotubes since the ignition phenomenon is "less efficient, i.e. the combustion process (explosion) appears to be incomplete." ( See page 1, paragraph 0013). Therefore, one of ordinary skill in the art would not be motivated to combine the teaching of Desilets with Stephens to arrive at an explosive of claim 6 having 80 weight percent or greater nanotube content in the explosive composition.

Claims 7-9 depend from claim 6 and are patentable for at least the reasons as cited for claim 6.

Independent claim 10 is patentable over Stephens in view of Desilets since Desilets teaches away from the invention as claimed for the reasons as stated in claim 6.

Claims 11-12 depend from claim 10 and are patentable over Stephens in view of Desilets for at least the same reasons as cited for claim 10.

Independent claim 13 is patentable over Stephens in view of Desilets since Desilets teaches away from the invention as claimed for the reasons as stated in claim 6 above.

Claims 14-15 and 17-21 depend from claim 13 and are patentable over Stephens and Desilets for at least the same reasons as discussed for claim 13.

Independent claim 22 includes all of the elements of claim 13 and is patentable over Stephens in view of Desilets for at least the reasons cited in support of claim 13.


Claims 23-24 depend from claim 22 and are patentable over Stephens in view of Desilets for at least the same reasons as discussed for claim 22.

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that all grounds of rejection have been avoided and/or traversed. It is believed that the case is now in condition for allowance and same is respectfully requested. The Examiner is invited to telephone Applicant's attorney (505-998-6134) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 13-4213.

Respectfully submitted,

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